

GIS ANALYST FOR THE MONTEREY BAY NATIONAL MARINE SANCTUARY POSITION ANNOUNCEMENT

I. INTRODUCTION

The Monterey Bay National Marine Sanctuary (MBNMS) provides resource protection through management, research, and education programs that foster public understanding and stewardship of a nationally significant marine ecosystem. The Monterey Bay Sanctuary Foundation requires the technical and professional services of a GIS analyst to supplement efforts of the MBNMS staff for several issues in the marine waters, coast and watersheds adjacent to the Sanctuary. The GIS analyst will compile, create and modify GIS data layers and related tools to assist in three major issue areas; a) evaluations of the potential for and design of marine protected areas (MPAs) within the sanctuary, b) assessments of shoreline sensitivity to landslide disposal, and c) evaluation of water quality and associated pollution control efforts in the sanctuary and its watersheds. These efforts will build upon existing GIS and web-based capabilities underway via the Sanctuary Integrated Monitoring Network (SIMoN) and will focus on initiatives outlined in the Sanctuary's Joint Management Plan Review. The resulting maps will help inform future management decisions for the sanctuary and its partners as well as contribute to improved characterizations of the region.

Efforts in part will require compiling, cleaning, and analyzing spatial digital information. This digital information will be used for GIS analysis and cartographic output. It will be necessary to integrate new data into the local existing GIS database at MBNMS from base layers to biological, oceanographic, geologic, socioeconomic, water quality and thematic layers such as marine habitat types to aid in the planning process. High quality cartography of these data will be required for all three projects.

II. STATEMENT OF WORK

Coordinate with the Sanctuary Integrated Monitoring Network (SIMoN) and MBNMS staff to evaluate data needs and create products as outlined in the following three issue areas:

1. Marine Protected Area Evaluations:

- a. Coordinate with the MBNMS MPA workgroup, agencies and scientific institutions to augment and refine the extensive existing MBNMS GIS database by gathering or creating GIS layers on bathymetry, geology, habitat types, biological resources, physical oceanography, and socioeconomic data on fisheries and non-consumptive use. Focus on data layers most relevant for MPA design

- consideration and modify data layers as needed to address defined categories or needs of MPA workgroup and staff.
- b. Evaluate and provide input to development and/or modification of MPA decision-support tools that will integrate data layers and allow MPA design queries. Become proficient at modifying and operating MPA decision-support tool, and populate tool with compiled data layers.
 - c. Attend regular meetings and interact with MBNMS MPA multi-stakeholder workgroup via presentations on data layers, responding to workgroup requests and operating the tool in a workgroup setting
 - d. Assist in the incorporation of informal or anecdotal information into GIS layers, including groundtruthing of habitat, biological and socioeconomic information
 - e. Coordinate with the GIS efforts of the state's Marine Life Protection Act process to ensure coordinated GIS data mapping across state and federal waters.

2. Regional Water Quality

- a. Coordinate with staff to obtain information on water quality data needs and determine which data layers are available, appropriate scales of resolution, and how best specific water-quality related questions can be addressed. Utilize compiled water quality program information and metadata already in SIMoN as a starting point.
- b. Compile, modify, and/or create data layers as needed to evaluate water quality patterns throughout the MBNMS and its watersheds. Spatially display nutrient, sediment and bacterial data by sampling locations and over time, incorporating data layers from multiple monitoring programs. Incorporate additional data layers relevant to water quality, such as topography, land use, etc. Develop framework to subdivide data displays into subregional or subwatershed presentations with modified scales of resolution.
- c. Assist MBNMS staff in developing data layers for display of watershed locations of management measures and programs to protect water quality, with emphasis on measures for agricultural runoff.
- d. Review existing data layers on locations and ownership of rural roads as a sediment source, gather and compile information from additional sources to fill data gaps and increase level of resolution.

3. Coastal Landslide and Impact Assessment

- a. Review and update current GIS data already collected for this project, including landslide locations, geology, nearshore coastal habitat, biological resources, erosion data, permit locations, imagery, etc. and incorporate relevant new data layers.
- b. Incorporate spatial display of ecological sensitivity to landslides along various locations of the Big Sur coast developed by PISCO, link with available photographs and layers in 2a.

- c. Coordinate with SIMoN, MBNMS, and CalTrans staff to finish consolidating and organizing GIS data and associated files (images, etc.) into a deliverable package, including documentation. Package may include one or more of the following: DVD, ArcReader files, map book, large plots, etc. as determined with staff.

General efforts for all three issues:

- a. Assist with packaging of GIS information for PowerPoint presentations and website displays, including development of interactive map services.
- b. FGDC-compliant metadata files will be supplied for each of the digital spatial layers created by the Contractor and detailed “read me” files as needed.

III. QUALIFICATIONS

The employee will be a part of a team responsible for applying GIS tools in support of these three major efforts. Work will include modifying/developing a Geographic Information System (GIS), database support, and interacting with staff and Sanctuary partners, including the interactive display of collected and analyzed GIS data. Must have excellent verbal and writing skills. Equivalent to a Master’s Degree, with major concentration in geography, computer cartography, GIS applications, or marine science. Experience in, but not limited to, GIS (ArcGIS 8.x and/or 9.x, Spatial and 3D Analyst), Microsoft Access and Excel, and Adobe digital imaging products. Must have advanced understanding of GIS concepts including projections, topology, relational databases, and cartographic production. Previous experience within marine science and coastal issues and central coast community is a plus.

IV. EMPLOYMENT TERMS

This position with the Sanctuary Foundation will be for one year, from July 11, 2005 to July 10, 2006. The employee will be based at the Sanctuary office in Monterey, California and will be provided with desk space, computer and GIS software, access to phone, internet, fax, copy machine, etc. Employee is expected to be available during normal business hours. Employment and health benefits are included with the position. Opportunities may be available for extension of position pending funding availability.

V. APPLICATION

Please send a resume outlining employment history and experience, a cover letter briefly explaining your interest and qualifications for this position, and the names and phone numbers of three references to: Chad King, Monterey Bay Sanctuary Foundation, 299 Foam St. Monterey, CA 93940. Resumes and supporting materials must be received at this address no later than June 28, 2005.

